



Islamic Religiosity and Pro-Environmental Behavior among Muslim Youth: An Integrative Public Health Approach to Climate Change Mitigation in Indonesia

Nurhayati^{1*}, Putra Apriadi Siregar¹, Sri Cahyanti¹, Nurhayati Saragih¹, Muhammad Rezebri¹, Putri Safira¹,
Apriliani², Sri Rahayu^{1,3}, Prima Yanti Siregar⁴

¹Universitas Islam Negeri Sumatera Utara, Medan, Indonesia

²Sekolah Tinggi Ilmu Kesehatan Malahayati Medan, Indonesia

³Volunteer Sanggar Bimbingan Sungai Mulia, Gombak, Malaysia

⁴Akademi Manajemen Informatika Komputer ITMI, Medan, Indonesia

*Email correspondence: nurhayati@uinsu.ac.id

<p>Track Record Article</p> <p>Revised: 15 October 2025 Accepted: 20 November 2025 Published: 31 December 2025</p> <p>How to cite : Nurhayati, N., Siregar, P. A., Cahyanti, S., Saragih, N., Rezebri, M., Safira, P., Apriliani, A., Rahayu, S., & Siregar, P. Y. (2025). Islamic Religiosity and Pro-Environmental Behavior among Muslim Youth: An Integrative Public Health Approach to Climate Change Mitigation in Indonesia. <i>Contagion: Scientific Periodical Journal of Public Health and Coastal Health</i>, 7(3), 441–451.</p>	<p style="text-align: center;">Abstract</p> <p><i>Introduction: The global climate crisis poses an unprecedented threat to human health, yet in highly religious societies such as Indonesia, integrating Islamic values into public health strategies for environmental behavior remains largely unexplored. Objective: This study aims to analyze the relationship between religiousness, pro-environmental attitudes, and environmentally friendly behavior among Muslim adolescents in North Sumatra Province, Indonesia. Methods: A cross-sectional study was conducted with 1,291 students from Islamic universities in Medan, selected through purposive sampling. Data were collected using a validated online questionnaire to measure religiosity, attitudes toward the environment, and self-reported pro-environmental behavior. Because the data distribution was not normal ($p < 0.001$), Spearman's rank correlation was used to test the hypothesis with JASP version 19 software at a 95% confidence level. Results: A statistically significant positive correlation was found between religiosity and pro-environmental behavior ($r = 0.501$, $p < 0.001$). In addition, a stronger positive correlation was observed between religiosity and attitudes toward the environment ($r = 0.565$, $p < 0.001$). These results indicate that higher levels of religious commitment are systematically associated with greater ecological awareness and action. Conclusion: Religiosity is a significant determinant of pro-environmental attitudes and behaviors among Muslim youth in Indonesia. Integrating environmental fiqh (Fiqh al-Bi'ah) into public health interventions offers a powerful and culturally rooted strategy for reducing climate-related health risks.</i></p> <p>Keywords: Islamic, Public Health, Pro-Environmental Behavior, Religiosity.</p>
--	--

INTRODUCTION

The contemporary climate crisis has transcended its origins as an exclusively ecological concern to become the preeminent threat to global public health in the 21st century. Projections from the OECD, estimating that outdoor air pollution could be responsible for 6 to 9 million premature deaths annually by 2060, starkly illustrate this reality (OECD, 2023). Anthropogenic activities, driving global warming, water scarcity, and pervasive pollution, systematically undermine both planetary health and human well-being (Karimi, 2022; Rees, 2015). Within the Association of Southeast Asian Nations (ASEAN), this dynamic is particularly acute. The region's rapid economic transition has often prioritized growth over ecosystem vitality, a trade-off that correlates with a rising burden of both infectious and non-communicable diseases attributable to climate change (Guo, 2014; Hsu, 2014; Sun, 2021). These health risks are further

exacerbated at the transnational level by systemic governance failures, including policy fragmentation and weak enforcement of environmental regulations, which disproportionately impact vulnerable populations (Naibaho, 2024; Parums, 2024). This global and regional phenomenon necessitates an integrated and context-specific response, particularly in nations characterized by high emissions and profound sociocultural diversity, such as Indonesia.

Indonesia finds itself at a critical juncture, facing deteriorating environmental conditions underscored by its 116th ranking out of 180 countries in the 2022 Environmental Performance Index (EPI), with a score of 37.8 that lags significantly behind regional neighbors such as Singapore and Malaysia (Purba, 2023). Despite a formal governmental commitment to reduce greenhouse gas emissions by 29% to 41% by 2030 through its Enhanced Nationally Determined Contribution (ENDC), progress is substantially hampered by a persistent dependence on coal energy and high emissions from land-use change (Subiyanto, 2024; United Nations Environment Programme, 2025). In a concerning departure from the declining trend of pollution-related fatalities observed in many OECD nations, Indonesia has recorded the fastest relative growth in emissions among G20 members, at 4.6% (OECD, 2024; United Nations Environment Programme, 2025). This intricate problem is compounded by the nation's archipelagic geography, which renders it exceptionally susceptible to extreme weather events and transboundary haze from forest fires, even as public awareness of environmental health linkages remains suboptimal (Wahyudin, 2020). This confluence of factors underscores an urgent need for scholarly inquiry that moves beyond purely technical policy analysis to engage with the foundational values and behaviors that shape society's relationship with the environment.

Existing scholarship has extensively explored the economic, technological, and legal determinants of pro-environmental behavior (Khoiri, 2021; Prakash, 2019; Liu, 2020). However, a significant and compelling gap persists in the literature: the systematic integration of religious values, particularly those derived from *Fiqh* (Islamic jurisprudence), in addressing climate-related health crises. While technocratic solutions and formal regulations are indispensable, they often prove insufficient when disconnected from the sociocultural and theological underpinnings of environmental ethics. This lacuna is especially pronounced in Indonesia, the nation with the world's largest Muslim population, where religious principles profoundly influence daily life (Prastiyo, 2020; Abas, 2022). The persistent inconsistency between national environmental policies and their grassroots implementation can be attributed, in part, to the absence of approaches that resonate with local value systems, such as Islamic

law, which offers a comprehensive ethical framework for safeguarding both public health and the ecosystem (Kautish, 2021; Naibaho, 2024).

This study is designed to address this critical gap by developing an integrative framework that synthesizes the principles of environmental fiqh (*fiqh al-bi'ah*) with the contemporary public health paradigm. This approach is predicated on the understanding that religiously grounded environmental ethics can serve as a powerful, internalized motivator for behavioral change, complementing and potentially surpassing the reach of secular legal instruments alone. The originality of this study lies in its proposition that *Fiqh al-Bi'ah* is not merely a set of ritualistic guidelines but a holistic system of ecological stewardship (*khalifah*) and social responsibility (*maslahah*) that directly aligns with the core tenets of public health: prevention, promotion, and protection.

Consequently, this study aims to analyze and formulate an integrative Fiqh perspective to foster pro-environmental behavior and enhance public health outcomes in Indonesia amid the climate crisis. Specifically, it seeks to: (1) evaluate the potential for internalizing *Fiqh al-Bi'ah* values to act as an effective driver for mitigating health risks associated with climate change; and (2) propose a conceptual model for operationalizing this integration within the Indonesian public health policy landscape. By doing so, this research aspires to provide a novel theoretical and practical foundation for policymakers and practitioners to design culturally resonant and ethically grounded interventions for environmental health sustainability.

METHODS

Research Design

This study used a cross-sectional design to identify risk factors for pro-environmental behavior among Muslim adolescents.

Location and time of research

The research was conducted in North Sumatra Province, Medan, in June and December 2025. North Sumatra Province was chosen as the research location because it has experienced several climate-related disasters, including flooding.

Population and Participants

This study used a research population consisting of all 5,400 students at Islamic universities. The sample in this study consisted of a portion of the students at these universities, and sample calculations were performed to obtain a sample size of 1,291 students. Participants in this study were selected based on the following criteria: Students aged 18-24 years who were willing to participate until the end.

Research Variables

The variables in this study are religiosity, environmentally friendly behavior, and attitudes towards the environment.

Instruments and Data Collection Tools

This study utilized an online questionnaire administered to participants. The questionnaire employed a religiosity variable with 19 items, each with response options of strongly agree, agree, disagree, and strongly disagree. The questionnaire uses the variable of attitudes towards the environment with 16 questions with answers of "strongly agree," "agree," "disagree," and "strongly disagree." The questionnaire uses the variable of environmentally friendly behavior with 22 questions with answers of always, often, sometimes, rarely, and never.

Data Collection Procedure

The questionnaire link was distributed through the university's official communication channels and student networks. Participants were given a digital written consent form explaining the purpose of the study, its voluntary nature, and data confidentiality measures. Only those who selected 'I Agree' could proceed to the survey items. To minimize response bias, the survey used mandatory fields to prevent missing data and implemented a 'one response per user' restriction through IP tracking to ensure the validity of participant responses.

Data Processing and Analysis

The data were analyzed using IBM SPSS Statistics software, following a structured statistical framework to achieve the research objectives. Normality tests were conducted to evaluate the distribution of the main variables: religiosity, environmental attitudes, and pro-environmental behavior. The Kolmogorov–Smirnov and Shapiro–Wilk tests were used. The results showed that all constructs exhibited non-normal distributions ($p < .001$).

Descriptive and non-parametric analyses were conducted to examine the non-normal distribution, and non-parametric statistical methods were applied for hypothesis testing. Descriptive statistics were used to summarize participants' demographic profiles. Correlation analysis was performed using Spearman's rank correlation (ρ) to test the strength and direction of the relationship between religiosity and pro-environmental behavior, religiosity and environmental attitudes, and environmental attitudes and related behavioral orientations. Significance levels were set for all two-tailed statistical tests at $\alpha = 0.01$ to ensure robust findings and minimize type I errors.

Ethical Clearance

This research obtained ethical clearance from the Universitas Islam Sumatera Utara with No. 113/EC/KEPK.UISU/X/2025. All participants provided informed consent prior to the research, and their willingness was crucial for the continuation of this study.

RESULT

Table 1. Tests of Normality (Kolmogorov-Smirnov and Shapiro-Wilk) for Religiosity, Environmentally Friendly Behavior, and Attitudes towards the Environment

Variable	Kolmogorov-Smirnov		Shapiro-Wilk		N
	Statistic	Sig.	Statistic	Sig.	
Religiosity	0.110	0.001	0.952	0.001	1291
Environmentally Friendly Behavior	0.059	0.001	0.970	0.001	1291
Attitudes towards the environment	0.096	0.001	0.927	0.001	1291

The normality tests using both Kolmogorov–Smirnov and Shapiro–Wilk showed that all three variables—Religiosity, Environmentally Friendly Behavior, and Attitudes towards the Environment—were not normally distributed ($p < .001$). Therefore, subsequent analyses were conducted using non-parametric statistical methods.

Table 2. Correlation between Religiosity and Environmentally Friendly Behavior (Spearman's rho)

Variable	N	R	P-value
Religiosity and Environmentally Friendly Behavior	1291	0.501	0.001

The Spearman's rho test revealed a moderate positive correlation between Religiosity and Environmentally Friendly Behavior ($r = .501$, $p < .001$). This indicates that higher levels of religiosity are associated with stronger environmentally friendly behaviors among respondents.

The correlation is statistically significant at the 0.01 level (two-tailed), confirming that the relationship is unlikely to have occurred by chance. In practical terms, the finding suggests that individuals with stronger religious commitment tend to demonstrate greater ecological responsibility in their daily actions, aligning spiritual values with environmental practices.

Table 3. Correlation between Religiosity and Attitudes towards the Environment (Spearman's rho)

Variable	N	R	P-value
Religiosity and Attitudes towards the Environment	1291	0.565	0.001

The Spearman's rho test demonstrated a moderately strong positive correlation between Religiosity and Attitudes towards the Environment ($r = .565$, $p < .001$). This result indicates that individuals with higher levels of religiosity also tend to have more positive attitudes toward environmental protection. The relationship is statistically significant at the 0.01 level (two-

tailed), suggesting that the observed association is reliable and not due to random variation. In practical terms, the findings show that religious values appear to shape and reinforce pro-environmental attitudes, supporting the view that spirituality and ecological awareness are interconnected.

DISCUSSION

Religiosity and Environmentally Friendly Behavior

The results of this study indicate a moderate positive correlation between religiosity and environmentally friendly behavior (Spearman's $\rho = 0.501$, $p < .001$) among 1,291 participants. Higher religious commitment is systematically associated with stronger ecological practices in daily life (Sa'id, 2024). The relationship between religiosity and the environment in Western or predominantly Christian contexts shows a strong positive correlation in Indonesia, a highly religious and culturally diverse society (Lee, 2024). Religiosity can serve as an active predictor of pro-environmental behavior, rather than merely a personal moral orientation (Karimi, 2022).

The positive association between religiosity and environmentally friendly behavior suggests that spiritual beliefs may operate as an internalized moral compass guiding ecological conduct through values such as stewardship, gratitude, and accountability before God (Karimi, 2022). In the Indonesian context, religious teachings that position humans as stewards of the earth are frequently translated into concrete practices, such as waste reduction, tree planting, and energy conservation through sermons, religious education, and community programs (Abidin, 2025). Initiatives such as eco-pesantren and faith-based environmental campaigns institutionalize these values by integrating environmental actions into religious life; thereby increasing the probability that stronger religiosity will be reflected in observable pro-environmental behavior.

Religion can act as a motivational mediator, strengthening ecological behavior resilience beyond regulatory pressure or economic incentives (Karimi, 2022). Individuals who view environmental protection as a religious obligation tend to exhibit higher intrinsic motivation and stronger moral commitments to environmental issues, which are crucial for sustaining actions that reduce pollution and protect local ecosystems, ultimately influencing public health outcomes such as respiratory diseases and waterborne infections (Lee, 2024).

Religiousness can positively predict pro-environmental behavior, especially when religious teachings emphasize responsibility for managing and ethically treating nature (Arli, 2017; Sa'id, 2024). Higher levels of religiosity are associated with stronger environmental

attitudes and behaviors among students and the general public (Febriansyah, 2023). Religiosity can be utilized as a psychological and social resource to promote sustainability in highly religious communities.

Some forms of religious fundamentalism are negatively associated with environmental concern and pro-environmental intentions, while spirituality shows the opposite pattern (Preston, 2022; Skalsk, 2022). National survey data from Indonesia also show that conservative religious views can reinforce anthropocentric perceptions of the human-nature relationship and are associated with lower levels of pro-environmental behavior, while more inclusive and reflective religious values serve as social capital that supports ecological engagement (Lee, 2024).

The core principles of ecological theology suggest that there is an intrinsic relationship between a person's relationship with the divine and their responsibility towards nature (Abas, 2022; Zulfikar, 2023). Works by scholars such as Syyed Hossein Nasr and Hamka's analysis of Tafsir al-Azhar argue that nature is not merely a resource to be exploited but a sign (ayat) of Allah's greatness, deserving respect and protection (Zulfikar, 2023).

Interpretations oriented toward active environmental management are promoted through institutions such as Islamic boarding schools and religious organizations, and higher religiosity is associated with stronger environmentally friendly behavior. This reinforces the “constructive religion” side of the literature, while acknowledging that doctrinal content and interpretation remain critical moderators (Lee, 2024).

Religiosity and Attitudes towards the Environment

Spearman's rho test shows a fairly strong positive correlation between religiousness and attitudes toward the environment ($r = .565$, $p < .001$) among 1,291 participants. Higher levels of religiosity were systematically associated with more positive views on environmental protection. Religious commitment is not only associated with concrete pro-environmental behavior but also with fundamental attitudes that support environmental concern and responsibility (Karimi, 2022; Sa'id, 2024). In Indonesia, a country with a strong religious context in which religious beliefs form the core of social identity, these findings suggest that religiosity is a significant driver of ecological awareness and support for environmental protection.

The strong correlation between religiosity and pro-environmental attitudes indicates that religious beliefs and teachings shape how individuals cognitively and morally assess environmental issues. A religious framework that emphasizes responsibility, accountability before God, and the sanctity of creation can encourage attitudes that view environmental

degradation as a moral issue rather than merely a technical or economic one (Saroglou, 2025; Karimi, 2022). Environmental protection becomes a value-laden obligation, thereby increasing the importance of ecological issues and the willingness to support environmental policies.

Religious leaders and faith-based organizations are increasingly linking climate change, pollution, and biodiversity loss to ethical and spiritual concerns, issuing sermons and fatwas that encourage environmental protection (Lee, 2024). This discursive framing contributes to more positive environmental attitudes by aligning ecological protection with obedience to God and community well-being, thereby reinforcing pro-environmental attitudes through doctrinal content and social pressure (Karimi, 2022). The significant correlations found in this study provide evidence that religiosity functions as a cognitive-moral lens through which environmental issues are interpreted and evaluated.

Attitude dimensions are crucial because attitudes often precede and underpin behavioral change. Planned behavior theory and related models suggest that environmental attitudes, along with subjective norms and perceived behavioral control, shape subsequent intentions and actions (Karimi, 2022). Higher levels of religiosity, which contribute to more positive environmental attitudes, can indirectly support the adoption of protective behaviors that reduce exposure to environmental health risks, such as air and water pollution, poor waste management, and climate-related hazards (Lee, 2024).

The positive relationship between religiosity and environmental attitudes is consistent across religious communities, where stronger religiosity is associated with greater environmental concern and support for pro-environmental norms. Sa'id (2024) reports that religiosity among Indonesian students significantly predicts pro-environmental attitudes, which, in turn, support behavioral intentions. Karimi (2022) shows that religiosity enhances the predictive power of the Theory of Planned Behavior model by providing an indirect effect on pro-environmental intentions through environmental attitudes and subjective norms among rural Muslim women. Religiosity can serve as an important prerequisite for pro-environmental attitudes when religious discourse emphasizes stewardship and ethical responsibility.

The relationship between religiosity and environmental attitudes is not always positive. Lower levels of religiosity and higher levels of spirituality are more closely associated with pro-environmental attitudes, while higher levels of conventional religiosity and fundamentalism are often associated with weaker environmental concern (Saroglou, 2025). Lower levels of religiosity and higher levels of spirituality are more closely associated with pro-environmental attitudes, while higher levels of conventional religiosity and fundamentalism are often associated with weaker environmental concern. Religious

fundamentalism negatively predicts environmentalism, whereas spirituality is positively associated with environmental concern and pro-environmental intentions. These conflicting patterns emphasize that the influence of religion on environmental attitudes depends on doctrinal content, the level of secularization, and the way religious worldviews perceive the relationship between humans and nature (Skalski, 2022).

In environments where religious narratives and institutions actively promote environmental stewardship, religion shows a positive, fairly strong relationship with pro-environmental attitudes. Religion can be utilized as a resource to strengthen environmental attitudes, especially when religious teachings and leadership explicitly articulate ecological protection as a moral and spiritual obligation (Karimi, 2022; Sa'id, 2024). This positive relationship should not be generalized indiscriminately; it depends on whether religion is expressed as an open, management-oriented orientation or as a rigid, anthropocentric, and fundamentalist one (Saroglou et al., 2004; Skalski, 2022).

CONCLUSION

Religiousness is significantly associated with pro-environmental attitudes and environmentally friendly behavior. Islamic theological principles, particularly khalifah (the obligation to care for the earth), tawhid (the oneness of God), and maşlahah (the public interest), are meaningful predictors of ecological awareness in the context of Muslim youth. Discourse on religious environmentalism, by quantifying the relationship between spiritual commitment and ecological responsibility, shows that individuals with stronger religious commitment systematically internalize environmental protection as a moral obligation rather than merely a secular concern. When religious teachings explicitly describe nature as divine signs (ayat) worthy of protection, and when institutions such as Islamic boarding schools and faith-based organizations actively promote ecological theological interpretations, religiosity functions as an internalized moral compass, guiding sustainable attitudes and behaviors.

The implementation gap, in which normative Islamic environmental principles are not consistently translated into sustainable ecological practices, particularly in waste management and sustainable consumption, underscores the critical mediating role of socio-cultural, institutional, and doctrinal factors in shaping the religion-environment relationship. Although religious authorities have issued progressive ecological fatwas and launched mosque-based initiatives, the effectiveness of such interventions depends on whether religious expression manifests as an inclusive management orientation rather than anthropocentric fundamentalism. This study proposes an integrated ecological fiqh framework rooted in maqaşid al-shariah, which implements Islamic values through formal education curricula, cross-sector

collaboration between religious and health policymakers, and strategic alignment with Indonesia's environmental agenda. This framework offers a culturally relevant pathway to mobilize Muslim communities toward sustainable behaviors that reduce climate-related health risks, address policy fragmentation, and enhance ecological resilience in the world's largest Muslim population centers.

REFERENCES

- Abas, Z. (2022). Analysis of Water Quality Change in Tourist Attractions to Reduce Ecological Destruction: Perspectives on Science and Environmental Theology. *IOP Conference Series: Earth and Environmental Science*, 1–10.
- Abidin, A. Z. (2025). Promoting Eco-Pesantren Based on Qur'an and Hadith at PPTA Al-Kamal Integrated Islamic Boarding School, Blitar, East Java, Indonesia. *QOF: Jurnal Studi Al-Qur'an Dan Tafsir*, 9(1), 135-154. <https://doi.org/10.30762/qof.v9i1.2794>.
- Arli, D. (2017). God and green: Investigating the impact of religiousness on green marketing. *International Journal of Nonprofit and Voluntary Sector Marketing*, 22(3), 1–10. <https://doi.org/10.1002/nvsm.1578>
- Febriansyah, M. A. (2023). The Influence of Environmental Identity and Religiosity on Pro-Environmental Behaviour (PEB) in Indonesian Society. *Jurnal Psikologi Karakter*, 3(2), 327–335. <https://doi.org/10.56326/jpk.v3i2.2492>
- Guo, Y. (2014). Global variation in the effects of ambient temperature on mortality: a systematic evaluation. *Epidemiology*, 25(6), 781-789. <https://doi.org/10.1097/EDE.0000000000000165>
- Hsu, A. (2014). *Environmental Performance Index*. Wiley StatsRef: Statistics Reference. <https://doi.org/10.1002/9781118445112.stat03789.pub2>
- Karimi, S. (2022). The Effect of Religiosity on Pro-environmental Behavior Based on the Theory of Planned Behavior: A Cross-Sectional Study Among Iranian Rural Female Facilitators. *Frontiers in Psychology*, 13(1), 1–10. <https://doi.org/10.3389/fpsyg.2022.745019>
- Kautish, P. (2021). Understanding choice behavior towards plastic consumption: An emerging market investigation. *Resources, Conservation and Recycling*, 174(1), 105828. <https://doi.org/10.1016/j.resconrec.2021.105828>
- Khoiri, N. (2021). The Maqashid Al-Sharia Ijtihad Approach and The Requirements for a Safe and Healthy Campus Free From Sexual Violence in Indonesian Universities. *Contagion: Scientific Periodical Journal of Public Health and Coastal Health*, 3(1), 166–175.
- Lee, H. (2024). *From Belief to Action: Religious Values and Pro-Environmental Behavior in Indonesia*. Indonesian Consortium for Religious Studies (ICRS).
- Liu, Z. (2020). Linking political attitude and pro-environmental behaviors in China. *Applied Economics Letters*, 27(18), 1463-1468. <https://doi.org/10.1080/13504851.2019.1690122>
- Naibaho, J. N. (2024). Legal Analysis of the Urgency of Formulating a Law on Climate Crisis Management in Indonesia Towards Net Zero Emissions [Analisis Yuridis Urgensi Pembentukan Undang-Undang Penanganan Krisis Iklim di Indonesia Menuju Emisi Nol Bersih]. *LEX PRIVATUM*, 13(4), 1–20.
- OECD. (2023). *Health at a Glance 2023: OECD Indicators*.
- OECD. (2024). Social and Emotional Skills for Better Lives: Findings from the OECD Survey on Social and Emotional Skills 2023. In *Social and Emotional Skills for Better Lives*. https://www.oecd.org/en/publications/social-and-emotional-skills-for-better-lives_35ca7b7c-en/full-report.html
- Parums, D. V. (2024). A review of the increasing global impact of climate change on human

- health and approaches to medical preparedness. *Medical Science Monitor: International Medical Journal of Experimental and Clinical Research*, 30(1), 38988000. <https://doi.org/10.12659/MSM.945763>
- Prakash, G. (2019). Do Altruistic And Egoistic Values Influence Consumers' Attitudes And Purchase Intentions Towards Eco-Friendly Packaged Products? An Empirical Investigation. *Journal of Retailing and Consumer Services*, 50(1), 163-169. <https://doi.org/10.1016/j.jretconser.2019.05.011>
- Prastiyo, S. E. (2020). How agriculture, manufacture, and urbanization induced carbon emission? The case of Indonesia. *Environmental Science and Pollution Research*, 27(33), 42092-42103. <https://doi.org/10.1007/s11356-020-10148-w>
- Preston, J. L. (2022). Opposing effects of Spirituality and Religious Fundamentalism on environmental attitudes. *Journal of Environmental Psychology*, 80(1), 101772. <https://doi.org/10.1016/j.jenvp.2022.101772>
- Purba, W. S. (2023). Pro-Environmental Behavior and Social Capital in Indonesia 2021: A Micro Data Analysis. *International Journal of Sustainable Development & Planning*, 18(7), 2107–2119. <https://doi.org/10.18280/ijstdp.180713>
- Rees, J. H. (2015). Guilty conscience: motivating pro-environmental behavior by inducing negative moral emotions. *Climatic Change*, 130(3), 439-452. <https://doi.org/10.1007/s10584-014-1278-x>
- Sa'id, M. (2024). Religion and Environment: The Role of Religiosity on Pro-environmental Behavior Among University Students in Indonesia. *KnE Social Sciences*, 8(1), 110–121. <https://doi.org/10.18502/kss.v9i30.17510>
- Saroglou, V. (2025). Pro-environmental attitudes and behavior: The role of religion and spirituality in secularized Europe beyond relevant individual differences. *Journal of Environmental Psychology*, 107(1), 1–14. <https://doi.org/10.1016/j.jenvp.2025.102799>
- Saroglou, V., Delpierre, V., & Dernel, R. (2004). Values and religiosity: a meta-analysis of studies using Schwartzs model. *Personality and Individual Differences*, 37, 721–734.
- Skalsk, S. B. (2022). Relationships between spirituality, religious fundamentalism and environmentalism. *International Journal of Environmental Research and Public Health*, 19(20), 13335. <https://doi.org/10.3390/ijerph192013242>
- Skalski, S. B. (2022). Relationships between Spirituality, Religious Fundamentalism and Environmentalism: The Mediating Role of Right-Wing Authoritarianism. *International Journal of Environmental Research and Public Health*, 14(19), 13242. <https://doi.org/10.3390/ijerph192013242>
- Subiyanto, A. (2024). Climate Diplomacy: Efforts to Save the Earth from Climate Crisis [Diplomasi Iklim: Upaya Menyelamatkan Bumi dari Krisis Iklim]. *PENDIPA Journal of Science Education*, 8(1), 27-34. <https://doi.org/10.33369/pendipa.8.1.27-34>
- Sun, S. (2021). Ambient heat and risks of emergency department visits among adults in the United States: time stratified case crossover study. *BMJ*, 375(1), e065653-e065653. <https://doi.org/10.1136/bmj-2021-065653>.
- United Nations Environment Programme. (2025). *Climate change in the courtroom: Trends, impacts and emerging lessons*. United Nations Environment Programme.
- Wahyudin. (2020). A Discussion of Environmental Law Policy in Indonesia with a Focus on the Mitigation of the Climate Crisis[Kebijakan Hukum Lingkungan Terhadap Penanggulangan Krisis Iklim Di Indonesia]. *Kalabbirang Law Journal*, 2(2), 91–100. <https://doi.org/10.35877/454RI.kalabbirang122>
- Zulfikar, E. (2023). Eco-Theology in Tafsir al-Azhar: Hamka's Efforts in Building a Paradigm and Environmental Awareness. *Proceeding International Conference on Quranic Studies.*, 1–10.